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PROVISIONAL SPECIFICATION.

Improvements in Wireless Telegraph Receivers.

We, Guglielmo Marconi, LL.D., D.Sc., and Charles Samuel Franklin, both of Watergate House, York Buildings, Adlephi, London, W.C., Electrical Engineers, do hereby declare the nature of this invention to be as follows:—

This invention relates to wireless telegraph receivers, and its object is to render such receivers more sensitive and capable of recording the signals received.

According to our invention we connect a series wound dynamo in series with a battery and a detector such as a Fleming valve, carborundum or other crystal. It is well known that at a certain potential the current in such a detector increases rapidly until it reaches the saturation value and the effect of introducing the dynamo is to make this increase of current very much more rapid. Energy is in fact given to the circuit by the dynamo at the right moment and this energy increases the strength of the signals in the telephone or other indicator.

By running the dynamo at a sufficiently high speed the circuit becomes unstable and the small additional potential applied to the circuit on the incidence of a wave produces an increase of current which is limited only by the saturation current of the detector.

This current may be made use of to work a relay and printer or sounder.

As however the current does not decrease again when the small applied potential is removed the circuit including the printer or sounder or other indicator should also include a second relay, whose function is to break or interrupt the dynamo and detector circuit as soon as the current in the latter reaches a value sufficient to work the first relay.

It is preferable to employ no iron in the construction of the series dynamo, but it is possible to use iron if it is well laminated and worked at a low magnetic density.

Dated this 1st day of January, 1912.

G. MARCONI.
C. S. FRANKLIN.

COMPLETE SPECIFICATION.

Improvements in Wireless Telegraph Receivers.

We, Guglielmo Marconi, LL.D., D.Sc., and Charles Samuel Franklin, both formerly of Watergate House, York Buildings, Adelphi, London, W.C., but now of Marconi House, Strand, London, W.C., Electrical Engineers, do hereby declare the nature of this invention and in what manner the same is to

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be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to wireless telegraph receivers, and its object is to render such receivers more sensitive and capable of recording the signals received.

According to our invention we connect a series wound dynamo or other dynamo having a similar characteristic curve in series with a battery and a detector such as a Fleming valve, carborundum or other crystal. It is well known that at a certain potential the current in such a detector increases rapidly until it reaches with some detectors a saturation value and the effect of introducing the dynamo is to make this increase of current very much more rapid. Energy is in fact given to the circuit by the dynamo at the right moment and this energy increases the strength of the signals in the telephone or other indicator.

By running the dynamo at a sufficiently high speed the circuit becomes unstable and the small additional potential applied to the circuit on the incidence of a wave produces an increase of current which is limited only by the saturation current of the detector.

This current may be made use of to work a relay and printer or sounder.

As however the current does not decrease again when the small applied potential is removed the circuit including the printer or sounder or other indicator should also include a second relay, whose function is to break or interrupt the dynamo and detector circuit as soon as the current in the latter reaches a value sufficient to work the first relay.

It is preferable to employ no iron in the construction of the series dynamo, but it is possible to use iron if it is well laminated and worked at a low magnetic density.

The accompanying diagrams show two arrangements of receiving instruments in accordance with our invention. In Figure 1 S is the secondary of a receiving transformer C the usual condenser across it, *d* a detector, T a telephone, D a series wound or similar dynamo, B a battery and R a variable resistance by which the potential may be adjusted.

In Figure 2 a telephone transformer *t* is interposed between the telephone and the detector and a second dynamo D^1 is inserted in the telephone circuit. If preferred the dynamo D may be omitted from this latter arrangement.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that we are aware that it has before been proposed to employ in telegraphy a dynamo for magnifying weak currents and we make no claim to such an arrangement broadly but what we claim is:—

1. In a wireless telegraph receiver connecting a series wound or similar dynamo in series with a detector such as a Fleming valve, carborundum or other crystal, substantially as described.
2. Wireless telegraph receivers substantially as described with reference to the drawing.

Dated this 30th day of July, 1912.

CARPMAEL & Co.,
Agents for Applicants,
24, Southampton Buildings, London, W.C.

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MARCONI & *another's* Complete Specification.

(1 Sheet)

[This Drawing is a full-size reproduction of the Original.]

Fig. 1.

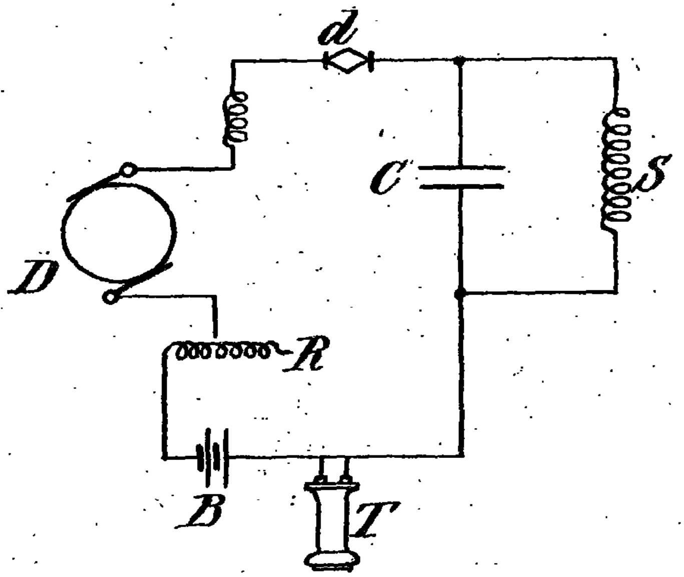
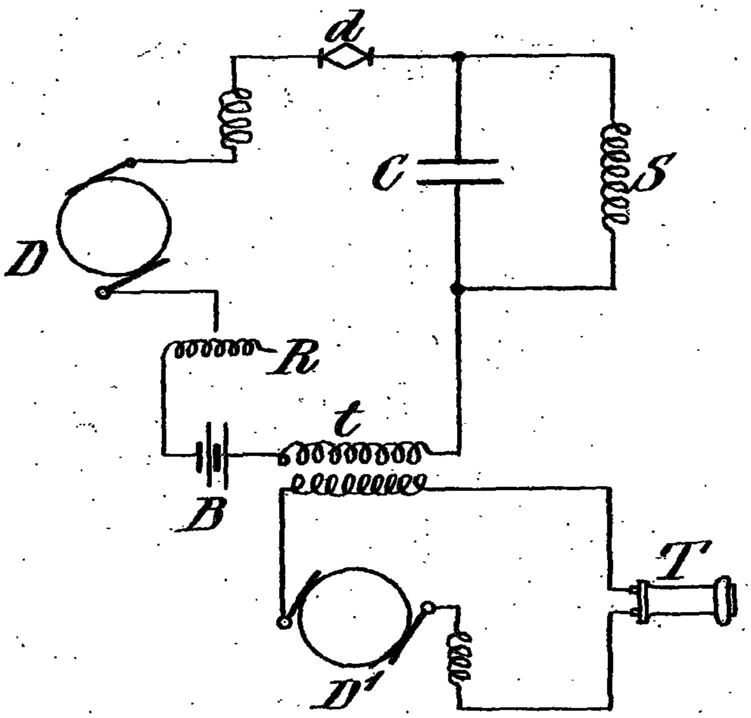


Fig. 2.



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